

Claims

- [c1] An apparatus for forming an alignment layer on a substrate of a liquid crystal display comprising:
means for generating an ion beam or an atomic beam;
masks interposed between the substrate and the generating means, and respectively including an edge in a shape based on the orientation direction at each position of an alignment layer; and
a slit formed by a plurality of edges of the masks.
- [c2] The apparatus according to claim 1, wherein the shape of one of said edges is determined by integrating the orientation direction of liquid crystals in forming an alignment layer using a linear edge perpendicular to the moving direction of the substrate along the linear edge.
- [c3] The apparatus according to claim 1, wherein one of said edges provided on the end side of the moving direction of the substrate includes a shape based on the distribution of the orientation direction of liquid crystals and the other edge provided on the starting side of the movement direction of the substrate is in a linear shape.
- [c4] The apparatus according to claim 1, wherein said edges

provided on the starting and end sides of the moving direction of the substrate are in the same shape.

- [c5] The apparatus according to claims 1, wherein said edges respectively include a curve shape.
- [c6] An apparatus for forming an alignment layer on a substrate of a liquid crystal display comprising:
means for generating an ion beam or an atomic beam;
a plurality of masks interposed between the substrate and the generating means; and
a slit formed by a plurality of edges of the masks,
wherein one of the edges of said masks projected on said substrate has a shape based on the orientation direction of liquid crystals at each position of said alignment layer.
- [c7] The apparatus according to claim 6, wherein the shape of the edge projected on said substrate is determined by integrating the orientation direction of liquid crystals in forming an alignment layer using a linear edge perpendicular to the moving direction of the substrate along the linear edge.
- [c8] The apparatus according to claim 6, wherein the shape of said edge of the mask projected on a substrate, said

edge being provided on the end side of the moving direction of the substrate, includes a shape based on the distribution of the orientation direction of liquid crystals, and the other edge provided on the starting side of the moving direction of the substrate is in a linear shape.

[c9] The apparatus according to claim 6, wherein said edges provided on the starting and end sides of the moving direction of the substrate are in the same shape.

[c10] The apparatus according to claims 6, wherein said edges respectively have a different distance from the substrate at each position, and one of said edges projected on the substrate includes a curve shape.

[c11] A method for forming an alignment layer comprising the steps of:

generating an ion beam;

forming an alignment layer by irradiating the ion beam at a thin film on a substrate via a slit formed by edges of masks; and

correcting the orientation direction of liquid crystals according to the alignment layer formed on the substrate using one of the edges.

[c12] The method according to claim 11, wherein said step of correcting includes integrating the orientation direction

of liquid crystals in forming an alignment layer using a linear edge perpendicular to the moving direction of the substrate along the linear edge.